

Investigation Title: Utilization of Skylab (EREP) System
for Appraising Changes in Continental
Migratory Bird Habitat.

EREP Investigation No. 486

Period Covered: January 1975

NASA Contract No. T-4114B

Principal Investigations Management Office:

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Houston, Texas 77058

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Type of Report: Monthly Progress

Overall Status:

Digital magnetic tapes (#933412, 933413) were received on 27 January. These CCT's will be used as back-ups for our primary S-192 data tapes of observations obtained on 12 June 1973.

An outcome of the evaluation of S-192 data is shown in the attached figure. This figure indicates the data value range of 95 percent of the pixels sampled systematically throughout one reel of our two reel data set. The pixels observed represent a one-percent sample. Generally, the samples had an approximate normal frequency distribution between the extremes shown in the figure. It would appear that these data values are generally depressed and lack the dynamic range of data being utilized in other investigations. These depressed data values and the low contrast (small dynamic range) are probably the result of the low sun angle and flat illumination conditions which existed at the time of the observation (approximately 0620 local solar time). These findings are consistent with our evaluation of screening film for the same S-192 data as reported in our monthly report for October 1974 (dated 4 November 1974).

A prime objective of this investigation is to recognize and map water. A preliminary analysis indicates this will be possible using an upper threshold rejection technique and a single near-infrared band of data. For example, our analysis indicates that water in the 1.55- to 1.75 μ m

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spectral band is characterized by data values of less than 10. Referring to the enclosed figure, it may be seen that this range of water data values is less than the bulk of the values which comprised the scene. Generally the scene was composed largely of herbaceous cover and bare soil elements.

Recommendations for Action:

None at this time.

Expected Accomplishments During the Next Reporting Period:

Thematic water maps and related statistics on surface water features will be generated using a single near-infrared waveband thresholding technique. Thereafter, multispectral processing of the data will be initiated. The purpose of the multispectral processing effort will be to improve the spatial resolvability of water features and to recognize and map vegetative features.

Significant Results:

None to report.

Summary Outlook:

We are now in the major processing and analysis effort of this program. This effort is expected to last for approximately the next two months.

Travel Summary and Outlook:

No travel was undertaken during the previous reporting period. Travel is not contemplated during the next reporting period.

DATA VALUE RANGE FOR 95% OF OBSERVED VALUES

-- Based on a 1% Systematic Sample of
SKYLAB Output Tape No. 700564

